

### REMARKS

Claims 1-47 are pending in this application, with claims 1, 12, 23, 34 and 44-47 being independent. Applicant has amended independent claims 1, 12, 23 and 34 to recite that the offset of the undesired signal is based on interference of an external interference source. Applicant also has amended dependent claims 8, 19, 30 and 39 to correct informalities objected to by the Examiner. Finally, Applicant has added new claims 40-47.

The abstract has been amended in view of the amendments to the claims. No new matter has been added.

### Allowable Subject Matter

Applicant acknowledges with appreciation the Examiner's indication that claims 4, 6-11, 15, 17-22, 26, 28-33, 37 and 39 recite allowable subject matter. Applicant has added new claims 44-47 that correspond to original claims 4, 15, 26 and 37 as rewritten in independent form. Applicant respectfully requests allowance of new claims 44-47 since these claims recite subject matter recognized as allowable by the Examiner.

### 35 U.S.C. § 102(e) Rejections

#### Chen Rejection of claims 1-3, 5, 12-14, 16, 23-25, 27, 34-36 and 38

Claims 1-3, 5, 12-14, 16, 23-25, 27, 34-36 and 38 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chen (U.S. Patent Application Publication US 2002/0197975 A1). This rejection is respectfully traversed.

Amended independent claim 1 recites a method for removing an undesired DC offset based on interference of an external interference source. The method includes observing a signal  $y_n$  that includes a desired signal and an undesired signal having an offset component based on the external interference. The offset component is modeled as including a step function defined by unknown step function parameters. The unknown step function parameters are estimated

analytically, and are used to adjust the observed signal,  $y_n$ . Moreover, new claim 40 recites that the desired signal may include data of interest. Applicant submits that Chen fails, at least, to describe or suggest determining unknown step function parameters associated with external interference, as required by amended claim 1, or of making this determination when the desired signals include data of interest, as recited by new claim 40.

The technology of Chen is materially different than that covered by amended claim 1. Chen describes a technique that may be used to calibrate DC offsets caused by internal variable gains of a receiver. Chen Abstract. For each receiver gain setting, Chen populates a look-up table with offset correction values determined from extensive empirical measurements of the receiver's internal interference source (i.e., the internal variable gains). In a first phase, Chen empirically measures the receiver's response to a known change to the DC offset. Chen at ¶ 0031. Chen uses the receiver's empirically measured response to determine system response parameters. Chen at ¶ 0031. In a second phase, each possible receiver gain setting is applied sequentially and the receiver's response to each is measured empirically. Chen at ¶¶ 0039, 0047. Chen then uses the system response parameters from phase one to determine the DC offset changes that are associated with each of the possible gain settings of the receiver and to populate the offset changes to the lookup table. Chen at ¶¶ 0039, 0046. Once calibrated, the receiver is able to use the lookup table to correct the DC offset of signals it may receive at the various receiver gain settings. Nevertheless, Chen fails entirely to describe or suggest determining unknown step function parameters associated with external interference, as required by amended claim 1.

Amended claim 1 describes that the undesired offset component is based on interference of an external interference source, presenting a very different problem than the internal interference source of Chen. *See also* Application at 7:3-8:4. Unlike the variable amplifier gains of Chen, the external interference source of claim 1 is not amenable to control or direct measurement by the receiver. Lacking control or direct measurement, Chen is inapplicable to the more interesting case presented by the external interference source of claim 1.

35-36, 38 and 41-43, are allowable over Chen for the reasons discussed above with respect to claim 1.

Moreover, new claims 40-43 recite that the desired signal includes data of interest, a circumstance expressly disavowed by Chen. Specifically, Chen determines offset values only when the receiver has no input signal or when the input signal includes no data of interest: “the calibration algorithm of the present invention is preferably not performed while a signal that carries data of interest is being received because the changes in DC offset current and gain may cause data corruption and/or increased error rate.” Chen at ¶ 0052; *see also* Chen at ¶ 0051. Plainly, the technology of Chen differs substantially from that recited by claims 40-43. Consequently, claims 40-43 are allowable over Chen for this additional reason just described.

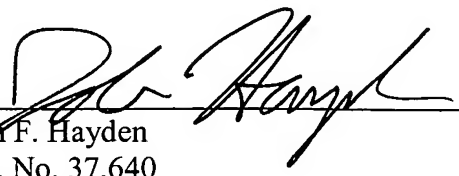
Applicant : Stuart A. Golden et al.  
Assignee : Intel Corporation  
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Enclosed is a \$416.00 check for excess claim fees. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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John F. Hayden  
Reg. No. 37,640  
Attorney for Intel Corporation

Fish & Richardson P.C.  
1425 K Street, N.W.  
11th Floor  
Washington, DC 20005-3500  
Telephone: (202) 783-5070  
Facsimile: (202) 783-2331

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